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1981 Survey of the Electronic Funds Transfer Transaction System

by

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1981 Survey of the Electronic Funds Transfer Transaction System

Electronic Funds Transfer Transactions

The retail payments system in the United States is undergoing rapid changes in the wake of spiraling labor costs, increasing processing costs for paper items, and capital-draining branches. Electronic funds transfer (EFT) is gaining ground as financial institutions seek more efficient and cost-effective means of handling consumer transactions.

Approximately 450 financial institutions were offering telephone bill-payment services at year-end 1981. Videotex field trials throughout the nation continue to include financial transactions services as a major feature of the product, with 12 financial institutions committed to or experimenting with interactive techniques as vehicles for providing banking services. Point-of-sale systems are reappearing as merchants, financial institutions, and consumers have begun to express renewed interest in this payment system alternative.

Although EFT has experienced general growth, two services continue to prevail. The automated clearing house (ACH) has grown from a vehicle primarily used for government transfer payments to a system used by the private and public sector alike. The automated teller machine (ATM) matured from a "marketing gimmick" to an accepted and valuable means for conducting retail transactions.

Various factors in the banking environment point to the continued growth of retail EFT. An uncertain regulatory environment and the prospect of interstate banking coupled with the emerging threat of nonbank competition have caused banks to rethink the proper delivery mechanism for their products. At the same time, the changing demographics of their customer base — two-income households, less disposable time, and a desire for a convenient and efficient method for transacting routine matters — point to increased usage and reliance on an electronic delivery system. How financial institutions enhance their current products, ACH and ATMs, and develop new technologies, such as videotex, could have a significant impact on the shape of the financial industry in years to come.

This study, the fourth of a series of Bank Administration Institute annual surveys of EFT transactions, concentrates on two EFT services: ACH and ATMs. The report analyzes growth, usage patterns, and transaction mix so that financial institutions can measure their own program experience and compare it with other financial institutions.

A new addition to this year's survey is Appendix C, "Problems Reported by Bankers." It includes comments received by respondents regarding ACH and ATM

systems. The remarks provide insights into the operational problems faced by banks providing these services and how some are resolving these problems.

Background

Bank Administration Institute has been a leader in payments systems research for several years by conducting studies of both the check collection system and the emerging technology for the electronic transfer of funds. To consolidate research in the payments system, the BAI Check Collection Performance Measurement Survey was expanded in 1978 to begin tracking electronic and paper transactions. This is the fourth year EFT data have been accumulated. The 1978 data were published in the form of a research survey. The 1979 data were published separately from the Check Collection Survey, in a format that subsequent reports followed closely.

The Check Collection Survey, which has been conducted by BAI since 1971, is a one-week survey of the check processing activity of major banks. This year the survey was mailed to 213 banks with assets over $250 million. It is designed to provide a means of tracking the performance of the check collection system, especially for exception items and productivity, to provide an early warning system for emerging problems throughout the banking industry.

Survey Respondents

In 1981, a total of 157 banks participated in the BAI Check Collection Survey by collecting data on both paper and electronic funds transfer transactions during the week of November 16–20. These data provide a one-week "snapshot" that allows performance comparisons with surveys conducted during similar periods in 1978, 1979, and 1980.

The results were obtained by analyzing the data supplied by the 151 banks that answered the questions on ACH transactions and by the 124 banks that answered the questions on ATM transactions. All the participating banks had assets of more than $250 million.

Several respondents could not answer every survey question because of constraints inherent in the internal systems in their banks. Consequently, only those banks that furnished valid answers to all questions pertaining to a given formula were included in the tabulations, which accounts for the varying number of respondents shown in the different tables. The formulas used for tabulating the results are provided to assist bankers in replicating the survey within their own banks for purposes of comparison.

Although the identities of reporting banks remain confidential, banks can use the data to compare their performance within a given market. A map in Appendix B defines the boundaries of the 16 geographic areas used in the development of this report. An accompanying table shows the number of survey respondents from each area.

1981 Survey Highlights

The 1981 survey for ACH and ATM transactions disclosed the following changes from the previous year:

- *ACH Transactions Sent.* Average percentage of debits sent increased from 66.1% in 1980 to 69.5% in 1981.
- *ACH Transactions Received.* Average debits received increased from 58.5% to 62.2%, while average credits received decreased from 41.5% to 37.8% in the 1980 and 1981 surveys, respectively.
- *ACH Return Items.* ACH returned items sent increased significantly (50%) from 0.6% in 1980 to 0.9% in 1981, while ACH returned items received increased slightly from 0.4% to 0.5%.
- *ACH Debit Types.* While insurance premiums constituted most of the ACH debits sent, corporate payments increased dramatically from 8.1% in 1980 to 19.1% in 1981.
- *ATM Transaction Mix.* For the first time, cash withdrawals from checking represented less than 50% of all ATM transactions at 45.5%. Balance inquiries increased from 19.1% to 26.5%.
- *Dollar Value of ATM Transactions.* Average cash withdrawal from checking increased 23.1% to $48.00. Average deposit to checking increased 28.8% to $362.00.
- *Weekly ATM Transactions.* Average number of transactions per ATM per week increased 30.4% to 1,646.1.
- *Total Dollar Value of ATM Activity.* Average deposits exceeded withdrawals by $25,199.60.
- *On-line ATM Operations.* Banks with on-line operations constituted 92.8% of those surveyed.

ACH Findings

In November, 1981, 32 ACHs were operating throughout the United States. During the survey period, total monthly volume surpassed 26,000,000 transactions, an increase of slightly more than 40% over the total volume during the previous year. Government credits accounted for more than 15,000,000 transactions, or 57.7% of total ACH transactions.

The National Automated Clearing House Association (NACHA) successfully increased volume from the private sector. Volume from the private sector during the 1981 survey period was slightly more than 11,000,000 transactions, a 69.2% increase over the approximately 6,500,000 transactions during the same time period in 1980. Because most government credits are initiated within the first few days of each month (predominantly Social Security payments), the findings from the mid-November survey are primarily private sector debits and credits.

Since the survey is not all-inclusive, but limited to a sample of commercial banks, the volume of ACH transactions recorded by survey participants is statistically insignificant. However, when the data are represented as percentages, trends relating to transaction types and points of origin and destination can be observed.

ACH Transactions Sent

The percent of ACH debits and credits sent by area is shown in Table 1. Overall, banks sent more debits (69.5%) than credits (30.5%)—a slight increase over the 1980 study. All but three of the areas, New York, Los Angeles, and San Francisco, reported an increase in the percentage of debits sent. Five areas in the survey reported sending more debits than credits: Washington, D.C. (50.2% vs. 49.8%), Atlanta (51.3% vs. 48.7%), Detroit (59.3% vs. 40.7%), Denver (62.6% vs. 37.4%), and for the third consecutive year, Houston (65.1% vs. 34.9%). The median rates were 33.4% for debits sent and 66.6% for credits sent.

ACH Transactions Received

For the second successive year, average debits received exceeded average credits received (see Table 2). In the survey, average debits received increased to 62.2% in 1981 from 58.5% in 1980. All areas, with the exception of Washington, D.C., reported receiving more debits than credits. Median figures were consistent with the average percentages, with median percent debits sent 64.7% and median percent of credits sent 35.3%.

Table 1

Percent of ACH Debits and Credits Sent by Area

Area	Percent Debits†				Percent Credits‡			
	1978	1979	1980	1981	1978	1979	1980	1981
Boston	0.2%	2.1%	10.9%	21.2%	99.8%	97.9%	89.1%	78.8%
New York	92.5	12.3	29.2	14.5	7.5	87.7	70.8	85.5
Philadelphia	13.6	5.2	9.7	14.7	86.4	94.8	90.3	85.3
Pittsburgh	7.8	25.8	31.7	38.0	92.2	74.2	68.3	62.0
Washington, D.C.	21.0	15.2	20.3	50.2	79.0	84.8	79.7	49.8
Atlanta	74.0	43.0	37.0	51.3	26.0	57.0	63.0	48.7
Chicago	33.5	7.6	19.7	24.8	66.5	92.4	80.3	75.2
Cleveland	18.5	10.5	33.4	43.3	81.5	89.5	66.6	56.7
Detroit	4.6	10.0	32.7	59.3	95.4	90.0	67.3	40.7
Minneapolis/St. Paul	*	*	*	30.5	*	*	*	69.5
St. Louis	61.0	17.9	43.3	48.7	39.0	82.1	56.7	51.3
Dallas	15.1	0.0	46.6	49.6	84.9	100.0	53.4	50.4
Houston	32.9	52.3	58.1	65.1	67.1	47.7	41.9	34.9
Los Angeles	25.2	10.4	47.2	21.0	74.8	89.6	52.8	79.0
San Francisco	12.7	40.9	49.4	46.2	87.3	59.1	50.6	53.8
Denver	1.7	14.7	57.5	62.6	98.3	85.3	42.5	37.4
Total banks	130	104	133	131	130	104	133	131
Average	44.0%	29.5%	66.1%	69.5%	56.0%	70.5%	33.9%	30.5%
Median	17.7%	0.7%	13.7%	33.4%	100.0%	99.3%	86.3%	66.6%

*No respondents; † $\frac{Q1}{Q5} \times 100$; ‡ $\frac{Q3}{Q5} \times 100$.

Table 2

Percent of ACH Debits and Credits Received by Area

Area	Percent Debits†				Percent Credits‡			
	1978	1979	1980	1981	1978	1979	1980	1981
Boston	15.3%	8.7%	57.7%	59.1%	84.7%	91.3%	42.3%	40.9%
New York	53.8	25.3	76.2	54.5	46.2	74.7	23.8	45.5
Philadelphia	65.3	4.5	75.9	62.2	34.7	95.5	24.1	37.8
Pittsburgh	8.6	2.9	80.3	67.4	91.4	97.1	19.7	32.6
Washington, D.C.	41.4	11.1	53.4	47.2	58.6	88.9	46.6	52.8
Atlanta	45.4	24.7	68.0	71.2	54.6	75.3	32.0	28.8
Chicago	18.7	3.7	59.7	51.1	81.3	96.3	40.3	48.9
Cleveland	54.4	5.7	57.5	52.3	45.6	94.3	42.5	47.7
Detroit	16.3	36.4	72.6	60.4	83.7	63.6	27.4	39.6
Minneapolis/St. Paul	*	*	*	52.6	*	*	*	47.4
St. Louis	38.5	21.5	63.3	69.0	61.5	78.5	36.7	31.0
Dallas	11.9	2.1	68.5	72.1	88.1	97.9	31.5	27.9
Houston	14.9	15.8	79.0	83.5	85.1	84.2	21.0	16.5
Los Angeles	66.2	15.1	54.1	69.7	33.8	84.9	45.9	30.3
San Francisco	35.7	17.6	70.4	72.0	64.3	82.4	29.6	28.0
Denver	6.7	2.1	57.5	71.3	93.3	97.9	42.5	28.7
Total banks	130	146	168	151	130	146	168	151
Average	36.7%	11.1%	58.5%	62.2%	63.3%	88.9%	41.5%	37.8%
Median	25.8%	4.3%	72.9%	64.7%	69.9%	95.7%	27.1%	35.3%

*No respondents; † $\frac{Q2}{Q6} \times 100$; ‡ $\frac{Q4}{Q6} \times 100$.

Sent Versus Received

Table 3 shows the percent of ACH items sent versus received by geographic area for debits, credits, and total ACH volume. All areas reported receiving more debits than credits, while two areas, Boston (73.2%) and Minneapolis/St. Paul (51.8%), sent more credits than were received. Boston reported sending more total ACH items (66.0%) than were received. All other areas in the survey received more total ACH items than were sent. For the first time, the average of total ACH items sent (53.5%) was higher than the total ACH items received.

Table 3

Percent of ACH Items Sent Versus Received by Area

	Percent of Debits†							
	Sent				Received			
Area	1978	1979	1980	1981	1978	1979	1980	1981
Boston	0.7%	16.6%	19.4%	31.9%	99.3%	83.4%	80.6%	68.1%
New York	81.4	10.8	12.5	13.0	18.6	89.2	87.5	87.0
Philadelphia	6.0	10.1	4.1	11.1	94.0	89.9	95.9	88.9
Pittsburgh	43.8	17.5	27.6	24.6	56.2	82.5	72.4	75.4
Washington, D.C.	15.3	22.2	14.5	28.7	84.7	77.8	85.5	71.3
Atlanta	46.3	22.6	15.5	26.9	53.7	77.4	84.5	73.1
Chicago	69.6	17.2	22.2	30.4	30.4	82.8	77.8	69.6
Cleveland	8.0	22.6	36.0	38.3	92.0	77.4	64.0	61.7
Detroit	1.6	4.6	19.0	13.5	98.4	95.4	81.0	86.5
Minneapolis/St. Paul	*	*	*	23.6	*	*	*	76.4
St. Louis	22.3	15.4	27.1	36.5	77.7	84.6	72.9	63.5
Dallas	36.6	0.0	21.6	17.5	63.4	100.0	78.4	82.5
Houston	12.6	18.7	31.2	25.7	87.4	81.3	68.8	74.3
Los Angeles	4.4	11.5	9.8	3.7	95.6	88.5	90.2	96.3
San Francisco	24.4	30.4	13.1	19.6	75.6	69.6	86.9	80.4
Denver	7.6	35.2	13.1	19.7	92.4	64.8	86.9	80.3
Total banks	130	142	168	150	130	142	168	150
Average	38.4%	39.6%	52.6%	56.3%	61.6%	60.4%	47.4%	43.7%
Median	0.0%	0.0%	0.1%	7.3%	100.0%	100.0%	99.9%	92.7%

*No respondents; † $\frac{Q1/Q2}{Q1 + Q2} \times 100$; ‡ $\frac{Q3/Q4}{Q3 + Q4} \times 100$; § $\frac{Q5/Q6}{Q5 + Q6} \times 100$.

Table 3 (Continued)

Percent of Credits‡

Area	Sent				Received			
	1978	1979	1980	1981	1978	1979	1980	1981
Boston	42.4%	26.5%	53.9%	73.2%	57.6%	73.5%	46.1%	26.8%
New York	29.2	25.7	24.5	39.0	70.8	74.3	75.5	61.0
Philadelphia	43.3	5.8	24.2	26.3	56.7	94.2	75.8	73.7
Pittsburgh	46.1	6.6	44.3	34.6	53.9	93.4	55.7	65.4
Washington, D.C.	32.4	9.2	47.9	30.1	67.6	90.8	52.1	69.9
Atlanta	20.1	11.1	32.2	30.5	79.9	88.9	67.8	69.5
Chicago	51.2	15.6	48.6	43.5	48.8	84.4	51.4	56.5
Cleveland	31.3	17.9	60.8	42.6	68.7	82.1	39.2	57.4
Detroit	6.3	4.2	43.3	14.4	93.7	95.8	56.7	85.6
Minneapolis/St. Paul	*	*	*	51.8	*	*	*	48.2
St. Louis	10.3	30.6	49.2	41.4	89.7	69.4	50.8	58.6
Dallas	30.6	4.3	39.5	34.5	69.4	95.7	60.5	65.5
Houston	4.9	17.6	30.8	25.7	95.1	82.4	69.2	74.3
Los Angeles	21.3	12.8	15.5	15.0	78.7	87.2	84.5	85.0
San Francisco	55.3	15.3	14.7	24.8	44.7	84.7	85.3	75.2
Denver	25.4	7.4	19.7	20.9	74.6	92.6	80.3	79.1
Total banks	130	143	168	151	130	143	168	151
Average	31.5%	16.2%	44.6%	48.2%	68.5%	83.8%	55.4%	51.8%
Median	10.8%	5.0%	30.0%	28.4%	85.9%	95.0%	70.0%	71.6%

Total ACH Item§

Area	Sent				Received			
	1978	1979	1980	1981	1978	1979	1980	1981
Boston	38.4%	26.0%	42.8%	66.0%	61.6%	74.0%	57.2%	34.0%
New York	71.8	27.5	21.7	26.5	28.2	72.5	78.3	73.5
Philadelphia	23.4	5.9	14.2	19.0	76.6	94.1	85.8	81.0
Pittsburgh	45.9	7.8	36.0	28.2	54.1	92.2	64.0	71.8
Washington, D.C.	26.3	11.1	37.4	33.5	73.7	88.9	62.6	66.5
Atlanta	34.6	16.3	23.9	31.1	65.4	83.7	76.1	68.9
Chicago	56.2	16.8	45.5	42.8	43.8	83.2	54.5	57.2
Cleveland	20.3	18.8	57.0	43.6	79.7	81.2	43.0	56.4
Detroit	5.6	3.2	28.4	14.6	94.4	96.8	71.6	85.4
Minneapolis/St. Paul	*	*	*	41.6	*	*	*	58.4
St. Louis	15.4	30.3	46.8	41.0	84.6	69.7	53.2	59.0
Dallas	31.4	4.2	33.0	22.6	68.6	95.8	67.0	77.4
Houston	6.1	18.6	32.7	27.3	93.9	81.4	67.3	72.7
Los Angeles	10.9	12.9	13.1	10.6	89.1	87.1	86.9	89.4
San Francisco	47.6	16.6	14.8	21.1	52.4	83.4	85.2	78.9
Denver	24.4	8.1	16.5	19.2	75.6	91.9	83.5	80.8
Total banks	130	144	168	151	130	144	168	151
Average	34.2%	19.6%	49.6%	53.5%	65.8%	80.4%	50.4%	46.5%
Median	8.6%	5.1%	20.7%	21.3%	87.8%	94.9%	79.3%	78.7%

ACH Transactions Returned

Return items for ACH transactions were measured by the percent of items that were sent and the percent of items that were received. Return ACH items sent were defined as any ACH transactions returned to the originator because of an inability to post the transaction to an account or for which there was no prenotification on file. Return ACH transactions received were any ACH transactions that were originated by the banks surveyed but were returned by either the ACH or the intended receiver. The reasons for returning the item were not questioned.

The percent of ACH return items sent by area is shown in Table 4. As in 1980, the average percent of ACH return items sent by area remained at 0.2%, while total ACH returned items sent increased by 50% from 0.6% to 0.9%. For the first time, the median credit returns sent were listed at 0.1%, while median debit return items sent remained at 1.7%. Total ACH return items sent declined from 1.5% in 1980 to 1.0% in 1981.

The percent of ACH return items received is shown in Table 5, with all categories showing an increase. Percent debit items returned to originator increased to 0.7% and percent return credits received by originator increased to 0.3%, while total items returned to originator increased to 0.5%. As in Table 4, the median figures increased. The percent of returned credits increased slightly to 0.1%. The median percent of returned debits received also increased from 0% to 0.1%, while total return items received remained at 0.2%.

Table 4

Percent of ACH Items Returned of Items Sent by Area

Area	Percent Debits†			Percent Credits‡			Percent Total§		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
Boston	28.5%	3.0%	8.5%	2.4%	0.0%	0.1%	7.8%	1.7%	3.1%
New York	0.0	8.9	4.1	0.1	0.0	2.6	0.3	5.9	18.2
Philadelphia	2.0	1.4	5.9	0.5	10.0	8.5	10.3	24.3	22.4
Pittsburgh	1.4	0.8	1.0	8.4	1.6	1.3	2.6	6.8	4.9
Washington, D.C.	20.7	12.3	35.5	0.2	0.1	0.4	2.8	1.7	4.4
Atlanta	1.4	57.8	15.8	0.6	0.5	0.8	1.0	5.5	5.3
Chicago	0.1	1.2	1.5	0.7	0.6	0.7	1.0	3.0	13.7
Cleveland	1.1	68.7	21.0	0.1	0.3	0.2	0.2	0.9	3.8
Detroit	13.6	26.8	3.5	0.0	3.6	0.0	7.6	9.6	3.0
Minneapolis/St. Paul	*	*	0.5	*	*	0.0	*	*	1.0
St. Louis	0.2	37.0	3.2	0.2	0.2	0.4	0.8	0.8	1.0
Dallas	0.0	0.5	1.4	0.0	1.3	0.1	0.1	1.1	2.0
Houston	0.0	0.7	3.6	0.1	16.9	8.2	0.1	1.1	3.9
Los Angeles	0.2	29.9	16.6	1.7	1.5	0.2	1.3	14.3	3.9
San Francisco	0.8	53.2	14.7	1.2	13.0	6.6	2.9	13.7	21.8
Denver	43.3	0.5	1.5	0.1	1.4	0.5	1.5	0.7	0.7
Total banks	51	78	90	98	118	113	96	120	116
Average	0.8%	0.5%	1.3%	0.1%	0.2%	0.2%	0.3%	0.6%	0.9%
Median	0.0%	1.7%	1.7%	0.0%	0.0%	0.1%	0.3%	1.5%	1.0%

*No respondents; † $\frac{Q7}{Q1} \times 100$; ‡ $\frac{Q9}{Q3} \times 100$; § $\frac{Q11}{Q5} \times 100$.

Table 5

Percent of ACH Items Returned of Items Received by Area

Area	Percent Debits†			Percent Credits‡			Percent Total§		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
Boston	2.7%	1.1%	1.4%	0.0%	1.6%	1.9%	0.1%	1.1%	1.7%
New York	1.7	1.1	0.5	0.0	2.2	0.4	0.7	1.1	0.4
Philadelphia	0.9	0.4	0.4	0.0	0.6	0.3	0.0	0.4	0.3
Pittsburgh	0.0	0.3	0.3	0.0	0.2	0.2	0.0	0.3	0.2
Washington, D.C.	3.3	0.4	0.8	0.0	0.2	0.3	0.2	0.3	0.5
Atlanta	6.2	1.1	1.4	0.1	0.1	0.8	0.3	0.6	1.2
Chicago	0.2	1.3	2.6	0.0	2.4	0.9	0.0	1.3	1.7
Cleveland	1.3	0.2	0.7	0.0	0.4	0.2	0.1	0.3	0.4
Detroit	0.8	0.4	0.3	0.0	0.4	0.1	0.2	0.4	0.4
Minneapolis/St. Paul	*	*	0.6	*	*	0.2	*	*	0.4
St. Louis	1.2	2.6	0.9	6.3	0.3	0.1	2.1	2.3	0.7
Dallas	0.0	0.7	0.3	0.0	1.6	0.2	0.0	0.8	0.3
Houston	0.7	0.3	0.2	0.5	3.6	0.6	0.4	0.6	0.3
Los Angeles	0.8	4.3	0.9	0.2	0.3	0.1	0.2	1.1	0.6
San Francisco	1.6	0.8	0.6	0.9	0.1	0.8	0.7	0.5	0.6
Denver	0.0	0.5	1.0	0.1	0.1	0.6	0.1	0.3	0.8
Total banks	134	155	143	138	155	145	137	155	145
Average	0.9%	0.5%	0.7%	0.0%	0.2%	0.3%	0.1%	0.4%	0.5%
Median	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.2%	0.2%

*No respondents; † $\frac{Q8}{Q2} \times 100$; ‡ $\frac{Q10}{Q4} \times 100$; § $\frac{Q12}{Q6} \times 100$.

ACH Debit Types

The percent of ACH debits sent by type of transaction is shown in Table 6. Again, insurance premiums constituted the largest percentage of type of transaction sent (73.7%). The most dramatic increase in type of transaction sent was corporate payments, which more than doubled from 8.1% in 1980 to 19.1% in 1981. Other types of transactions include home mortgage (1.2%) and telephone bill payment (0.8%). All other payments dropped to 5.2%.

The types of ACH debit transactions received by the responding banks are shown in Table 7. As expected, insurance premiums constituted the highest percentage (33.6%). Consistent with Table 6, corporate payments doubled from 7.2% to 14.4%. Home mortgages (3.6%) and telephone bill payment (2.9%) were next. Because of the difficulty in classifying debits received, the "other" category accounted for 45.5% of debits received.

Two ACH debit types—home mortgages and telephone bill payment (TBP)—are in the control of the financial institution. At first glance, the volume of debits sent and received for home mortgages and TBP may appear low. Yet, a 1981 survey on TBP conducted by Bank Administration Institute indicated that 16.8% of the commercial banks offering TBP use the ACH for remittance processing. It can be concluded that the percentages of home mortgages and TBP payments are low in comparison to other ACH debits because of the limited number of commercial banks offering the service.

Table 6

Percent of ACH Debit Transactions Sent by Type of Transaction by Area

Area	Insurance Premium†			Home Mortgage‡			Telephone Bill Payment§			Corporate Payment ll			Other Payments #		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
Boston	0.9%	0.0%	0.0%	0.0%	10.8%	0.0%	0.0%	0.0%	0.0%	48.0%	32.5%	59.2%	51.1%	56.7%	40.8%
New York	100.0	49.8	32.8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	50.2	33.8	0.0	0.0	33.3
Philadelphia	0.0	*	0.0	0.0	*	0.0	0.0	*	1.1	0.0	*	66.7	100.0	*	32.2
Pittsburgh	0.7	*	0.0	0.0	*	0.0	0.0	*	0.0	99.3	*	100.0	0.1	*	0.0
Washington, D.C.	0.0	18.3	27.7	56.5	25.2	21.6	0.0	0.1	0.0	0.0	3.1	14.3	43.5	53.4	36.3
Atlanta	34.3	5.8	10.0	16.4	12.3	0.2	4.9	7.1	14.5	14.1	20.6	55.1	30.3	54.2	20.2
Chicago	29.8	0.0	0.0	53.5	1.5	0.0	0.0	0.0	0.0	0.0	64.8	60.7	16.7	33.7	39.3
Cleveland	32.0	19.2	11.3	1.2	1.4	1.0	0.0	0.0	0.0	0.0	42.6	69.6	21.6	36.8	18.1
Detroit	0.0	14.7	20.7	0.6	0.2	0.3	0.0	0.0	0.0	0.0	28.1	44.9	99.4	57.0	34.1
Minneapolis/St. Paul	*	*	0.0	*	*	0.0	*	*	4.4	*	*	65.4	*	*	30.2
St. Louis	47.4	13.6	0.0	45.8	4.8	6.1	0.0	14.0	6.7	2.6	56.2	81.2	4.2	11.5	6.0
Dallas	*	0.0	0.0	*	0.0	0.0	*	0.0	0.0	*	66.6	50.0	*	33.4	50.0
Houston	0.0	0.0	33.3	0.0	25.0	19.6	0.0	0.0	0.0	0.0	25.0	47.0	100.0	50.0	0.1
Los Angeles	0.0	*	4.4	100.0	*	0.4	0.0	*	0.0	0.0	*	0.0	0.0	*	95.2
San Francisco	64.9	19.1	23.4	35.1	30.9	0.5	0.0	25.0	0.1	0.0	0.0	75.0	0.0	25.0	1.0
Denver	7.5	6.4	2.6	27.1	26.9	20.9	0.0	0.0	0.0	0.0	33.3	16.6	65.4	33.3	60.0
Total banks	32	52	57	32	52	57	32	52	57	32	52	57	32	52	57
Average	65.4%	77.8%	73.7%	14.5%	1.7%	1.2%	2.2%	1.0%	0.8%	10.0%	8.1%	19.1%	7.9%	11.4%	5.2%
Median	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	59.3%	6.3%	13.8%	0.4%

*No respondents; † $\frac{Q13}{Q23} \times 100$; ‡ $\frac{Q15}{Q23} \times 100$; § $\frac{Q17}{Q23} \times 100$; ll $\frac{Q19}{Q23} \times 100$; # $\frac{Q21}{Q23} \times 100$.

Table 7

Percent of ACH Debit Transactions Received by Type of Transaction by Area

Area	Insurance Premium†			Home Mortgage‡			Telephone Bill Payment§			Corporate Payment ll			Other Payments #		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
Boston	71.0%	61.8%	53.8%	0.8%	0.0%	0.0%	0.2%	0.1%	0.0%	3.5%	7.7%	14.6%	24.5%	30.4%	316%
New York	65.0	74.4	82.4	8.1	0.0	0.5	1.3	0.1	0.1	24.4	19.8	12.2	1.2	5.7	4.7
Philadelphia	43.1	70.5	61.4	0.0	0.3	0.1	9.1	0.0	6.1	22.7	15.2	16.9	20.5	14.0	15.4
Pittsburgh	23.5	44.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	76.5	18.5	45.9	0.0	37.5	0.1
Washington, D.C.	42.3	23.7	58.5	2.1	5.8	14.1	0.0	2.7	0.0	19.1	5.5	4.1	36.5	62.3	23.3
Atlanta	43.0	54.6	50.4	4.9	0.9	7.1	8.3	1.4	1.7	9.1	11.3	9.6	34.7	31.7	31.2
Chicago	74.4	76.6	68.4	5.0	4.8	0.0	0.0	3.8	0.7	12.0	9.6	17.8	12.9	5.2	13.1
Cleveland	34.8	49.9	59.8	19.1	5.0	4.0	2.2	1.2	0.4	9.4	21.5	20.3	34.5	22.3	15.5
Detroit	55.7	53.1	42.3	0.1	0.2	1.0	0.0	0.0	0.0	8.7	11.5	18.0	35.5	35.2	38.6
Minneapolis/St. Paul	*	*	43.7	*	*	0.3	*	*	28.1	*	*	17.6	*	*	10.3
St. Louis	33.6	34.8	37.9	15.0	7.0	4.2	0.3	3.2	6.9	14.7	15.6	17.2	36.4	39.5	33.9
Dallas	85.7	39.4	22.7	0.2	5.0	4.0	2.9	0.0	0.0	2.6	6.9	26.8	8.6	48.7	46.6
Houston	49.4	43.2	38.1	0.2	1.8	0.9	0.8	0.0	5.2	12.9	4.6	17.1	36.7	50.4	38.7
Los Angeles	45.3	62.1	61.3	2.2	2.5	2.0	0.0	0.0	0.0	20.1	25.1	16.1	32.5	10.4	20.6
San Francisco	18.2	41.1	31.6	6.0	1.0	1.3	0.9	0.2	0.3	13.9	8.6	39.3	61.0	49.1	27.4
Denver	15.3	8.2	30.0	3.3	0.4	3.4	26.7	0.0	1.1	5.0	1.9	3.0	49.8	89.5	62.5
Total banks	109	116	78	108	116	78	108	116	78	108	116	78	107	116	78
Average	31.1%	31.7%	33.6%	9.0%	2.2%	3.6%	2.6%	4.3%	2.9%	15.6%	7.2%	14.4%	41.5%	54.6%	45.5%
Median	51.0%	62.9%	60.8%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	2.1%	8.8%	13.0%	14.5%	14.2%	12.5%

*No respondents; † $\frac{Q14}{Q24} \times 100$; ‡ $\frac{Q16}{Q24} \times 100$; § $\frac{Q18}{Q24} \times 100$; ll $\frac{Q20}{Q24} \times 100$; # $\frac{Q22}{Q24} \times 100$.

ATM Findings

At year-end 1981, more than 3,000 financial institutions had installed an ATM program. Estimates by Linda Fenner Zimmer, an industry expert on ATMs, show that approximately 25,000 ATMs had been installed as of December, 1981. This represents a 38% increase in the total number of ATMs installed as compared to 1980.

The reasons why bankers continue to install and support ATM programs are varied. Many financial institutions have come to view ATMs as a means for displacing manual transactions through the traditional branch. By using electronic means to transfer funds, banks may also realize a reduction in backroom personnel costs. Other reasons why banks install ATMs include the desire to be seen as an innovator in the consumers' eyes, to increase market share and corporate visibility, and as a means to meet the consumers' increasing demand for convenience and efficiency. Most bankers consider ATMs the most successful EFT product to date.

This section analyzes ATM transaction mix, average dollar variables, transaction volume, current ATM sites and future installation plans, and on-line versus off-line operations.

Transaction Mix

For the first time in the survey's history, cash withdrawals from checking constituted less than 50% of all ATM transactions. Average withdrawal figures of 45.5% represent a 12.8% drop since 1980. Median figures, however, show that cash withdrawals from checking represent 54.2% of all ATM transactions, a 1.5% increase over the previous year. The most dramatic increase in percentage of ATM transactions was in balance inquiries, which represented 26.5% of all transactions, 38.7% higher than in 1980. Deposits to checking accounts dropped from 13.6% in 1980 to 10.5% in 1981. For the first time, the 1981 EFT Survey asked information concerning bill payments, which represented 0.5% of all ATM transactions (see Table 8).

Table 8

Percent of ATM Transactions by Type by Area

Area	Cash Withdrawals from Checking†				Cash Withdrawals from Savings‡				Cash Withdrawals from Credit Card§			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
Boston	41.6%	59.8%	61.0%	48.5%	6.8%	8.5%	8.2%	16.7%	1.3%	1.4%	0.5%	0.2%
New York	59.1	66.2	47.5	33.5	1.9	3.2	9.0	9.0	23.7	8.5	4.0	0.5
Philadelphia	49.2	58.9	55.1	49.5	11.0	10.0	10.2	12.2	2.7	1.2	1.0	0.8
Pittsburgh	58.2	55.2	59.2	52.1	5.9	10.0	9.9	7.5	4.1	2.5	2.0	1.1
Washington, D.C.	51.5	59.3	58.9	59.9	6.0	5.5	7.6	4.7	5.2	2.3	1.5	0.9
Atlanta	52.3	52.8	51.5	54.8	4.3	4.6	5.4	5.6	1.0	3.4	1.4	0.7
Chicago	27.1	49.6	54.6	53.9	9.4	9.9	10.1	8.7	0.9	1.0	1.5	1.0
Cleveland	41.4	51.4	50.4	48.1	10.1	10.6	12.2	12.2	3.1	2.8	1.8	1.5
Detroit	45.6	55.7	45.0	46.0	13.8	10.3	14.4	14.7	1.1	9.4	9.5	6.6
Minneapolis/St. Paul	*	*	*	77.3	*	*	*	4.9	*	*	*	0.6
St. Louis	51.1	53.5	55.2	52.4	6.7	8.1	7.4	6.3	2.8	1.6	1.3	1.0
Dallas	*	50.9	49.9	60.2	*	3.2	4.5	2.8	*	4.2	0.6	0.1
Houston	61.6	45.4	60.6	57.8	5.0	4.3	7.8	3.9	0.4	10.9	0.4	0.1
Los Angeles	52.8	51.1	50.4	59.0	2.8	4.6	4.9	4.3	8.6	6.5	0.9	0.8
San Francisco	64.2	52.5	64.6	60.3	5.5	18.5	9.8	6.8	4.0	1.3	0.5	1.0
Denver	52.8	55.9	61.5	59.7	5.2	4.5	3.7	5.4	0.5	5.5	2.8	1.0
Total banks	56	109	126	128	56	109	126	128	56	109	126	128
Average	50.1%	51.1%	52.2%	45.5%	6.6%	7.7%	8.3%	8.1%	3.0%	2.3%	1.1%	0.6%
Median	51.5%	53.3%	53.4%	54.2%	5.6%	5.9%	7.5%	6.9%	1.8%	1.3%	0.7%	0.3%

Area	Balance Inquiries‖				Transfers#				Checking Deposits††			
	1978	1979	1980	1981	1978	1979	1980	1981	1978**	1979	1980	1981
Boston	21.6%	7.8%	18.1%	21.0%	3.6%	3.0%	1.6%	1.6%		10.8%	8.5%	6.9%
New York	13.5	13.0	28.8	42.4	0.4	1.6	1.2	2.2		6.2	7.3	7.0
Philadelphia	12.3	7.2	13.3	17.9	4.1	3.5	2.4	2.5		16.0	13.7	12.7
Pittsburgh	16.8	13.0	16.9	23.2	1.2	2.1	1.8	1.4		12.7	9.0	10.7
Washington, D.C.	17.8	12.2	13.7	17.3	2.9	3.5	2.7	1.5		13.9	11.5	13.7
Atlanta	26.3	23.6	22.5	24.0	2.0	2.0	4.6	1.5		10.6	9.7	8.0
Chicago	41.2	14.2	14.2	15.3	4.2	5.9	4.9	2.4		10.9	10.6	16.1
Cleveland	21.3	13.6	17.3	19.3	4.4	3.7	2.6	2.5		13.9	12.0	10.0
Detroit	22.6	9.5	15.9	12.4	6.8	3.3	3.5	2.9		9.6	8.3	12.2
Minneapolis/St. Paul	*	*	*	4.9	*	*	*	2.9		*	*	7.0
St. Louis	22.3	17.2	20.0	22.1	3.8	3.7	3.3	2.2		11.7	10.4	9.0
Dallas	*	28.2	30.8	23.9	*	2.2	1.8	1.5		10.1	10.0	10.8
Houston	16.7	19.1	18.2	28.5	1.6	2.0	1.2	1.0		8.1	10.7	8.1
Los Angeles	14.3	17.6	19.8	18.6	3.4	2.9	1.5	1.2		14.2	20.2	14.1
San Francisco	16.3	11.0	8.4	15.6	4.6	2.1	2.4	2.0		13.5	12.8	12.3
Denver	19.3	16.8	17.4	18.1	2.6	2.4	1.7	2.7		11.5	9.9	11.7
Total banks	56	109	126	128	56	109	126	128		109	126	128
Average	21.9%	20.4%	19.1%	26.5%	3.2%	2.8%	2.3%	2.2%		11.9%	13.6%	10.5%
Median	18.4%	15.6%	18.7%	22.6%	2.7%	2.7%	2.2%	1.9%		11.9%	10.0%	9.6%

Table 8 (Continued)

Area	Savings Deposits §§ 1978**	1979	1980	1981	Bill Payment ‖ ‖ 1978**	1979**	1980**	1981	Other ATM Transactions ## 1978	1979	1980	1981
Boston		1.8%	1.7%	3.1%				0.3%	29.1%	6.7%	0.5%	1.6%
New York		0.4	1.5	1.9				0.9	1.5	0.8	0.6	2.7
Philadelphia		2.1	1.7	2.0				0.9	20.7	1.2	2.7	1.4
Pittsburgh		1.2	1.0	0.9				0.4	13.8	3.3	0.3	2.5
Washington, D.C.		1.4	1.0	0.6				1.4	16.6	1.9	3.1	0.1
Atlanta		0.5	1.1	0.5				0.2	14.0	2.5	3.8	4.7
Chicago		1.5	1.8	1.6				0.4	17.2	7.1	2.4	0.5
Cleveland		1.4	1.8	1.7				1.6	19.8	2.5	2.0	3.1
Detroit		1.1	1.6	1.8				1.3	10.1	1.1	1.8	2.0
Minneapolis/St. Paul		*	*	0.4				0.1	*	*	*	2.0
St. Louis		1.0	0.9	0.7				0.3	13.1	3.0	1.4	6.0
Dallas		0.5	0.9	0.4				0.3	*	0.7	1.6	0.0
Houston		0.4	0.8	0.4				0.1	14.7	9.9	0.3	0.0
Los Angeles		0.6	0.5	0.8				0.5	18.1	2.6	1.8	0.7
San Francisco		0.4	1.1	0.9				0.3	5.3	0.7	0.4	0.8
Denver		0.4	0.4	1.2				0.0	19.6	3.0	2.6	0.2
Total banks		109	126	128				128	56	109	126	128
Average		1.0%	1.4%	1.5%				0.5%	15.2%	2.8%	2.0%	4.6%
Median		0.8%	0.9%	0.8%				0.3%	14.9%	0.8%	0.5%	0.0%

*No respondents; † $\frac{Q25}{Q34} \times 100$; ‡ $\frac{Q26}{Q34} \times 100$; § $\frac{Q27}{Q34} \times 100$; ‖ $\frac{Q28}{Q34} \times 100$; # $\frac{Q29}{Q34} \times 100$;

**No comparable data collected; †† $\frac{Q30}{Q34} \times 100$; §§ $\frac{Q31}{Q34} \times 100$; ‖ ‖ $\frac{Q32}{Q34} \times 100$; ## $\frac{Q33}{Q34} \times 100$.

Dollar Value of ATM Transactions

The average dollar amounts involved in each type of ATM transaction varied in all survey categories, as shown in Table 9. In comparing the findings in the 1980 study, dollar values of ATM transactions involving checking accounts increased substantially. The average cash withdrawal from checking was $48.00, a 23.17% increase over $39.00 in 1980. The average deposit to a checking account was $362.00, a 28.8% increase from $281.00 in 1980. In comparison, the average cash withdrawal from a savings account was $47.00, a modest 6.8% increase while the average deposit to a savings account was $301.00, a decrease of 3.8%. The average cash withdrawal from a credit card was $54.00, and the average bill payment was $155.00.

Table 9

Average Dollar Value of ATM Transactions by Area

Area	Cash Withdrawals from Checking†			Cash Withdrawals from Savings‡			Cash Withdrawals from Credit Card§			Checking Deposits ll			Savings Deposits #			Bill Payment‡‡		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
Boston	$34	$38	$42	$46	$35	$43	$31	$39	$47	$265	$348	$322	$988	$229	$248			$257
New York	44	47	55	35	45	54	44	44	63	278	312	329	258	212	258			• 145
Philadelphia	40	42	47	57	48	50	68	58	51	237	329	303	327	267	261			838
Pittsburgh	38	37	40	41	38	42	43	51	47	276	283	290	237	244	215			624
Washington, D.C.	36	36	43	48	45	44	53	48	56	324	303	366	328	613	276			132
Atlanta	34	35	57	41	36	52	43	91	49	298	258	279	235	341	283			153
Chicago	40	39	39	60	53	52	45	43	51	332	361	500	303	391	367			220
Cleveland	39	35	36	39	36	37	43	40	40	297	272	295	250	237	234			109
Detroit	40	43	39	47	46	43	45	45	38	332	311	561	363	357	249			115
Minneapolis/St. Paul	•	•	52	•	•	55	•	•	42	•	•	627	•	•	294			517
St. Louis	37	38	34	43	53	43	53	55	62	293	299	279	423	291	233			109
Dallas	31	35	40	40	68	49	53	58	61	272	358	354	519	264	281			104
Houston	38	38	39	42	38	49	40	56	61	438	278	343	403	287	214			106
Los Angeles	39	40	43	46	55	53	45	46	42	348	290	334	346	376	334			133
San Francisco	37	44	46	34	41	52	43	51	67	346	317	356	290	368	329			171
Denver	35	29	38	44	39	45	62	46	69	295	373	392	308	257	445			•
Total banks	106	124	124	100	122	122	85	95	88	101	119	122	90	113	117			92
Average	$36	$39	$48	$38	$44	$47	$47	$58	$54	$309	$281	$362	$285	$313	$301			$155
Median	$37	$38	$40	$42	$43	$45	$43	$46	$48	$313	$289	$323	$271	$279	$256			$137

*No respondents; † Q35/Q25; ‡ Q36/Q26; § Q37/Q27; ll Q38/Q30; # Q39/Q31; **No comparable data collected; ‡‡ Q40/Q32.

Weekly ATM Transactions

Average weekly transactions per ATM continues to increase. Total transactions numbered 1,646.1, a dramatic 30.4% increase over volumes reported in 1980 (see Table 10). Eleven areas reported an increase in total weekly ATM transactions, whereas four reported a decrease. No comparable figures were available for the Minneapolis/St. Paul area. The areas showing the highest increase in ATM transactions included Denver, which reported 1,135.5 weekly transactions in 1980 and 1,954.5 weekly transactions in 1981, a 72.1% increase. The St. Louis area increased total ATM transactions by 70.1%, from 1,240.5 weekly transactions in 1980 to 2,110.7 in 1981. The areas showing a decline in transaction volume included Washington, D.C., Detroit, Dallas, and Houston.

1981 Total Dollar Value of ATM Activity

Transaction Type	Withdrawals	Deposits	Net
Checking	$35,275.20	$59,657.60	$24,382.40
Savings	6,208.70	7,555.10	1,346.40
Credit card	529.20	0.00	(529.20)
Total	$42,013.10	$67,212.70	$25,199.60

ATMs have been considered as net deposit takers. By multiplying the average dollar amounts by the average transaction volumes (Table 9 × Table 10), the dollars deposited to dollars withdrawn ratio can be calculated. In the 1980 study, the dollar deposited to dollar withdrawn ratio was 1.7:1. The dollar deposited to dollar withdrawn ratio declined slightly to 1.6:1, while net deposits were 10.2% higher in 1981 than in 1980. Table 11 shows the number of weekly transactions per ATM categorized by terminal location. Consistent with past findings in the survey, the transaction volumes are relatively evenly distributed between main office, branch office, and off-premise ATMs. The transaction volumes are slightly lower in Table 11 than in Table 10 because of the number of institutions that were unable to report the transaction volume information by terminal location.

Location of ATM Units

Banks continue to give high priority to placing ATM terminals on bank property. Consistent with the 1980 study, 91.6% of all ATM units are located at main office or branch locations.

As shown in Table 12, the priority in placing ATMs off-premise varies widely from one geographic area to another. The Chicago area experienced a 114.4% increase in ATMs placed off-premise, while the Denver area increased off-premise units by 72.7%. The Detroit area showed the greatest decline in the percentage of ATM units off-premise, dropping from 22.3% to 10.4% — a 53.4% decrease.

Table 10

Average Weekly Transactions per ATM Unit by Area

Area	Cash Withdrawals from Checking†				Cash Withdrawals from Savings‡				Cash Withdrawals from Credit Card§			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
Boston	178.4	333.2	369.8	496.9	29.0	47.1	65.7	153.2	5.5	5.8	3.6	2.2
New York	378.7	318.4	424.2	465.0	0.0	16.4	85.9	176.1	155.8	42.2	29.6	10.6
Philadelphia	491.7	381.5	476.3	576.7	110.0	75.9	119.4	154.8	26.6	8.3	13.9	10.9
Pittsburgh	732.4	564.1	759.2	733.7	74.2	97.3	105.8	105.2	52.0	26.9	26.3	17.8
Washington, D.C.	443.9	669.0	695.7	467.6	51.7	61.5	92.7	38.6	44.6	22.0	18.3	6.1
Atlanta	880.0	797.0	701.6	1,139.7	72.3	73.8	64.2	100.5	17.6	28.9	14.2	13.1
Chicago	90.8	348.4	461.3	469.4	31.5	85.7	99.4	97.9	2.9	12.8	14.9	10.3
Cleveland	440.1	392.8	466.3	814.5	112.2	98.4	114.7	202.4	28.0	19.0	14.8	17.6
Detroit	494.2	202.6	343.4	300.6	149.4	30.1	121.9	82.9	11.7	18.2	15.4	8.7
Minneapolis/St. Paul	*	*	*	546.6	*	*	*	47.2	*	*	*	6.7
St. Louis	577.8	614.1	656.5	1,070.0	76.2	96.5	91.5	162.6	32.2	18.9	17.2	14.7
Dallas	*	776.0	744.4	677.2	*	62.5	110.4	37.0	*	38.1	6.8	1.9
Houston	364.5	484.4	534.3	530.9	29.4	50.1	79.6	38.2	2.2	15.2	0.8	1.1
Los Angeles	407.5	692.1	722.9	1,001.7	22.0	53.8	77.8	84.8	66.2	47.5	14.8	17.7
San Francisco	423.2	399.5	714.3	762.3	36.4	85.8	110.8	86.3	26.2	10.9	6.0	11.2
Denver	741.0	508.5	644.9	1,002.4	73.0	46.6	46.8	119.6	6.3	17.5	16.1	11.5
Total banks	54	105	124	122	54	105	124	122	54	105	124	122
Average	491.1	546.6	658.0	734.9	64.2	81.0	103.4	132.1	28.6	23.4	14.2	9.8
Median	464.1	428.3	516.5	587.9	59.8	46.0	70.8	80.8	20.5	10.0	6.7	5.4

Area	Balance Inquiries ‖				Transfers #				Checking Deposits ††				Savings Deposits §§			
	1978	1979	1980	1981	1978	1979	1980	1981	1978**	1979	1980	1981	1978**	1979	1980	1981
Boston	92.6	72.6	150.3	262.8	15.6	15.6	12.3	17.3		48.0	67.7	89.8		9.2	13.2	30.5
New York	76.1	93.4	302.2	625.9	0.1	9.0	11.1	32.8		38.9	65.8	102.1		1.9	16.0	38.7
Philadelphia	122.5	82.6	175.2	241.3	41.0	24.2	27.4	31.0		112.6	133.1	151.1		16.0	21.1	26.4
Pittsburgh	212.1	187.6	313.8	369.7	14.8	22.8	22.4	20.2		137.0	120.1	137.8		12.3	11.6	13.1
Washington, D.C.	153.8	142.4	177.2	153.6	25.3	34.5	32.0	13.7		150.4	136.2	112.0		20.2	12.2	5.4
Atlanta	442.9	390.0	347.5	577.8	34.2	30.2	33.5	32.3		160.7	113.8	176.8		8.4	28.8	10.1
Chicago	138.0	131.7	153.4	203.3	14.1	38.4	45.4	27.0		99.2	102.7	109.5		16.2	18.5	16.6
Cleveland	262.3	257.9	215.3	324.5	49.9	54.4	25.5	34.1		110.0	117.2	172.6		14.4	19.7	28.0
Detroit	244.5	40.1	197.3	124.5	73.7	8.7	38.6	20.5		31.2	75.0	102.0		3.7	14.9	11.3
Minneapolis/St. Paul	*	*	*	54.1	*	*	*	19.3		*	*	50.3		*	*	3.5
St. Louis	252.6	261.2	285.9	498.0	43.4	43.7	36.4	47.1		128.0	124.5	200.8		11.5	12.0	18.2
Dallas	*	530.9	445.5	368.9	*	29.2	23.1	20.1		156.1	155.5	124.4		10.4	22.4	6.4
Houston	99.1	237.7	208.1	279.6	9.6	19.1	14.4	9.3		91.8	106.6	73.2		5.3	8.9	4.4
Los Angeles	110.2	219.3	279.6	358.0	26.3	32.9	25.0	23.3		208.1	264.9	223.7		7.5	7.4	16.0
San Francisco	107.8	121.4	106.9	322.3	30.1	15.9	28.2	25.8		123.3	169.3	162.7		2.0	14.4	9.9
Denver	271.4	181.3	256.7	501.1	36.5	20.1	16.9	37.2		122.7	120.8	239.1		5.8	5.9	36.7
Total	54	105	124	122	54	105	124	122		105	124	122		105	124	122
Average	217.8	225.7	242.1	462.6	31.5	30.1	29.0	35.2		127.0	172.2	164.8		10.2	17.6	25.1
Median	156.6	100.7	191.1	277.1	26.9	19.1	20.2	19.6		93.5	111.3	115.1		5.6	8.9	9.6

Table 10 (Continued)

Area	Bill Payment ‡‡ 1978**	1979**	1980**	1981	Other ATM Transactions ## 1978	1979	1980	1981	Total ATM Transactions *** 1978	1979	1980	1981
Boston				4.1	124.8	36.1	3.0	4.3	429.0	567.6	685.6	1,061.0
New York				6.2	2.9	6.0	7.1	88.4	611.7	526.0	941.9	1,545.8
Philadelphia				10.0	207.3	9.3	44.5	23.8	999.1	710.5	1,010.8	1,226.1
Pittsburgh				5.4	173.6	56.4	3.9	22.2	1,259.1	1,104.3	1,363.1	1,425.7
Washington, D.C.				10.3	143.3	20.4	39.3	1.1	862.7	1,120.3	1,203.7	808.4
Atlanta				5.4	235.5	24.6	54.5	30.1	1,682.6	1,513.6	1,358.1	2,085.8
Chicago				3.9	57.6	144.2	23.9	7.4	334.8	876.7	919.4	945.2
Cleveland				21.9	223.1	36.3	21.5	35.5	1,115.6	984.2	994.9	1,651.1
Detroit				7.6	109.3	3.0	17.4	25.3	1,082.8	337.7	823.8	683.4
Minneapolis/St. Paul				0.6	*	*	*	24.5	*	*	*	752.8
St. Louis				4.3	148.1	29.2	16.5	95.1	1,130.3	1,203.1	1,240.5	2,110.7
Dallas				8.5	*	12.1	56.7	0.6	*	1,615.4	1,564.9	1,245.0
Houston				1.4	86.9	87.1	3.0	0.0	591.8	990.7	955.7	938.1
Los Angeles				10.1	139.4	21.7	20.4	15.8	771.6	1,282.8	1,412.7	1,751.1
San Francisco				3.8	34.8	4.1	4.8	18.0	659.5	763.0	1,154.7	1,402.2
Denver				*	274.8	43.6	27.5	6.9	1,403.0	945.2	1,135.5	1,954.5
Total banks				122	54	105	124	122	54	105	124	122
Average				8.9	148.6	30.0	25.5	72.8	981.2	1,074.0	1,262.1	1,646.1
Median				4.0	172.1	5.2	5.1	0.0	1,039.0	792.2	1,040.7	1,138.1

*No respondents; † Q25/Q47; ‡ Q26/Q47; § Q27/Q47; ‡‡ Q28/Q47; # Q29/Q47; **No comparable data collected;

†† Q30/Q47; §§ Q31/Q47; ‡‡ Q32/Q47; ## Q33/Q47; *** Q34/Q47.

Table 11

Number of Weekly Transactions per ATM Unit Location by Area

Area	Main Office Units † 1979	1980	1981	Branch Office Units ‡ 1979	1980	1981	Off-Premise Units § 1979	1980	1981	Total ‡‡ 1979	1980	1981
Boston	705	798	1,244	457	688	884	0	888	1,314	495	565	801
New York	762	945	1,033	402	553	612	554	1,087	2,127	445	640	724
Philadelphia	663	617	1,029	602	694	1,035	720	725	1,218	609	695	1,080
Pittsburgh	837	2,108	1,392	1,050	1,230	1,038	1,937	2,369	1,306	991	1,329	1,050
Washington, D.C.	361	827	1,522	1,063	1,125	718	842	831	765	979	1,052	719
Atlanta	1,098	1,192	1,513	915	1,297	1,525	962	1,419	1,566	1,147	1,256	1,484
Chicago	517	734	736	570	582	548	364	679	411	736	660	587
Cleveland *	1,014	728	988	548	743	1,001	790	289	533	576	746	978
Detroit	330	693	529	248	434	521	172	0	368	298	460	519
Minneapolis/St. Paul	*	*	987	*	*	787	*	*	704	*	*	860
St. Louis	982	1,109	1,856	1,216	1,253	1,896	474	958	778	1,055	1,135	1,702
Dallas	807	714	269	1,679	3,206	1,114	1,173	2,210	779	1,084	1,927	723
Houston	648	650	761	740	508	599	30	808	664	768	740	658
Los Angeles	768	784	766	1,235	1,127	1,368	610	908	941	1,245	1,097	1,312
San Francisco	493	2,062	1,410	670	1,045	1,113	601	1,410	1,170	587	1,059	1,123
Denver	999	907	2,205	121	369	1,449	1,764	2,040	1,362	876	905	1,768
Total banks	63	68	83	71	73	85	31	35	55	90	82	94
Average	786	1,089	1,203	813	1,018	1,114	852	1,190	1,174	813	1,040	1,126
Median	722	823	986	669	831	921	789	994	957	667	842	933

*No respondents; † Q57/Q41; ‡ Q59/Q43; § Q61/Q45; ‡‡ Q63/Q47.

Table 12

ATM Units by Area

Area	Percent of Main Office ATM Units†			Percent of Branch Office ATM Units‡				Percent of Off-Premise ATM Units§				
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
Boston	9.5%	34.0%	31.8%	23.3%	90.5%	66.0%	67.1%	73.9%	0.0%	0.0%	1.1%	2.8%
New York	3.2	11.3	17.8	4.4	90.5	85.7	71.1	88.4	6.3	3.1	11.1	7.3
Philadelphia	10.2	15.8	5.1	5.4	85.2	79.5	87.0	81.2	4.5	4.7	7.9	13.4
Pittsburgh	3.7	30.9	2.9	6.2	95.1	64.2	94.6	88.6	1.2	4.8	2.5	5.2
Washington, D.C.	5.7	13.8	2.9	2.5	80.9	78.3	88.2	90.1	13.4	8.0	8.9	7.5
Atlanta	8.4	14.0	6.3	6.5	74.3	64.6	76.7	79.3	17.3	21.3	17.1	14.2
Chicago	22.3	47.9	50.6	34.6	11.4	37.1	34.7	34.1	66.3	15.0	14.6	31.3
Cleveland	7.1	6.4	7.1	6.1	83.8	89.3	89.5	87.4	9.1	4.3	3.4	6.4
Detroit	9.6	18.3	7.1	8.7	84.9	60.9	70.7	80.9	5.5	20.7	22.3	10.4
Minneapolis/St. Paul	*	*	*	57.7	*	*	*	39.9	*	*	*	2.4
St. Louis	10.1	26.8	25.9	21.3	64.3	64.8	68.2	68.2	25.6	8.3	5.9	10.4
Dallas	15.4	66.7	55.0	39.4	0.0	30.8	18.7	34.0	84.6	2.6	26.3	26.6
Houston	14.0	46.3	29.2	38.8	82.0	50.3	64.7	52.2	4.0	3.3	6.1	9.0
Los Angeles	3.7	7.1	4.8	4.3	80.0	88.5	93.2	92.3	16.2	4.4	2.0	3.5
San Francisco	3.8	3.9	1.5	1.6	86.7	88.4	97.4	96.5	9.5	7.7	1.1	1.9
Denver	48.9	48.3	38.6	28.0	0.0	39.4	43.1	40.4	51.1	12.3	18.3	31.6
Total banks	89	107	128	122	89	107	128	122	89	107	128	122
Average	10.6%	13.3%	8.1%	7.0%	69.3%	77.7%	83.5%	84.6%	20.1%	9.1%	8.5%	8.5%
Median	7.1%	7.7%	5.4%	6.3%	81.1%	84.2%	88.6%	85.5%	0.0%	0.0%	0.0%	3.7%

*No respondents; † $\frac{Q41}{Q47} \times 100$; ‡ $\frac{Q43}{Q47} \times 100$; § $\frac{Q45}{Q47} \times 100$.

ATM Installation Plans

As reported in the 1980 study, banks are still giving priority to branch office sites for new ATM installations (see Table 13). In 1980, it was reported that 72.3% of all ATMs to be installed during the next calendar year would be placed in a branch location, whereas in 1981, 73.9% of new ATMs would be installed at branch office locations. The percentage of ATMs to be installed off-premise was reported at 23.2%, a slight decrease from the 24.7% reported in 1980. Total ATM installation growth decreased slightly to 43.7% in comparison to current installations. The number of ATMs installed has grown significantly between 1980 and 1981, from an approximate 18,500 to a year-end total of 25,000. The two areas showing the highest growth in new installations include Detroit (90.2%) and Dallas (75.2%).

On-Line Versus Off-Line

Bankers continue to be strongly committed to on-line ATM operations (Table 14). Currently, 92.3% of those banks participating in the survey reported operating on-line, a significant increase in comparison to the 68.4% operating on-line just two years ago. Eleven areas reported 100% on-line operation for 1981. The highest levels of off-line operation were reported in Washington, D.C. (40%) and Boston (25%).

Table 13

ATM Unit Installation Plans by Area

Area	Percent of Total ATM Units to Be Installed in Main Office†			Percent of Total ATM Units to Be Installed in Branch Office‡			Percent of Total ATM Units to Be Installed Off-Premise§			Total New ATM Installations to Current Installations ‖		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
Boston	16.7%	4.8%	3.3%	81.3%	82.9%	90.0%	2.1%	12.3%	6.7%	387.0%	111.5%	38.5%
New York	0.8	3.3	1.0	74.2	86.6	38.9	25.0	10.1	60.1	812.9	38.6	29.9
Philadelphia	9.5	1.1	6.7	75.8	81.7	78.6	14.6	17.2	14.7	760.4	94.8	32.1
Pittsburgh	3.3	0.0	2.8	80.0	68.8	53.7	16.7	31.2	43.5	143.4	123.2	28.8
Washington, D.C.	0.0	0.0	3.2	98.2	93.8	85.8	1.8	6.2	11.0	14.6	37.2	52.7
Atlanta	6.3	5.3	6.6	52.7	65.0	69.2	41.0	29.6	24.2	73.9	55.1	61.7
Chicago	29.9	14.3	7.7	41.1	57.6	47.5	39.1	28.1	44.8	93.6	34.9	36.8
Cleveland	0.0	5.2	0.8	92.1	87.4	57.9	7.9	7.5	41.3	27.2	45.1	37.2
Detroit	0.0	20.8	7.4	46.9	40.1	75.9	53.1	39.1	16.7	68.4	41.5	90.2
Minneapolis/St. Paul	*	*	25.0	*	*	55.0	*	*	20.0	*	*	39.9
St. Louis	16.7	15.6	8.3	63.9	60.0	66.7	19.4	24.4	25.0	61.5	18.1	13.8
Dallas	20.0	0.0	13.3	70.0	12.5	21.7	10.0	87.5	65.0	174.4	423.3	75.2
Houston	28.1	25.0	41.6	56.3	35.0	34.4	15.6	40.0	24.0	136.2	47.5	58.1
Los Angeles	35.7	2.0	16.1	60.3	90.9	62.5	4.1	7.1	21.4	128.3	57.5	33.3
San Francisco	0.1	0.1	0.0	89.1	78.3	86.1	10.7	21.7	13.9	202.8	69.3	55.1
Denver	8.3	13.3	46.7	25.0	50.0	30.0	66.7	36.7	23.3	55.6	70.2	45.8
Total banks	80	100	96	80	100	96	80	100	96	95	117	120
Average	17.8%	3.0%	2.9%	71.7%	72.3%	73.9%	10.5%	24.7%	23.2%	74.8%	50.5%	43.7%
Median	0.0%	0.0%	0.0%	80.6%	80.0%	70.2%	0.0%	8.9%	16.3%	30.0%	30.0%	24.7%

*No respondents; † $\frac{Q49}{Q55} \times 100$; ‡ $\frac{Q51}{Q55} \times 100$; § $\frac{Q53}{Q55} \times 100$; ‖ $\frac{Q55}{Q47} \times 100$.

Table 14

On-Line Versus Off-Line ATM Units by Area

Area	Percent On-Line ATM Units			Percent Off-Line ATM Units		
	1979	1980	1981	1979	1980	1981
Boston	20.0%	75.0%	75.0%	80.0%	25.0%	25.0%
New York	33.3	80.0	100.0	66.7	20.0	0.0
Philadelphia	40.0	81.8	85.7	60.0	18.2	14.3
Pittsburgh	100.0	100.0	100.0	0.0	0.0	0.0
Washington, D.C.	50.0	75.0	60.0	50.0	25.0	40.0
Atlanta	83.3	84.6	100.0	16.6	15.4	0.0
Chicago	50.0	66.7	85.7	50.0	33.3	14.3
Cleveland	85.7	100.0	100.0	14.3	0.0	0.0
Detroit	66.7	100.0	100.0	33.3	0.0	0.0
Minneapolis/St. Paul	*	*	100.0	*	*	0.0
St. Louis	50.0	80.0	85.7	50.0	20.0	14.3
Dallas	100.0	100.0	100.0	0.0	0.0	0.0
Houston	80.0	100.0	100.0	20.0	0.0	0.0
Los Angeles	100.0	100.0	100.0	0.0	0.0	0.0
San Francisco	80.0	100.0	100.0	20.0	0.0	0.0
Denver	100.0	100.0	100.0	0.0	0.0	0.0
Total banks	57	79	83	57	79	83
Average	68.4%	87.3%	92.8%	31.6%	12.7%	7.2%

*No respondents.

Appendices

Appendix A

1981 Survey Questionnaire

1981 Survey of Electronic Funds Transfer Transactions

Please report all actual counts. *Do not round off.*

ACH TRANSACTIONS—any electronic funds transfer transactions processed through a local or regional automated clearinghouse, including any items you have processed for your own customers.

RETURNED ACH TRANSACTIONS:

Sent—any ACH transaction that you returned to the originator because you were unable to post to an account or for which no prenotification was on file.

Received—any ACH transaction that you originated, but which was returned to you by the ACH or the intended receiver.

ACH DEBIT TRANSACTIONS:

Insurance Premium, Home Mortgage—any ACH transaction sent or received by you for the payment of a consumer obligation.

Telephone Bill Payment—any ACH transaction sent or received by you as a result of a telephone bill payment program at a financial institution.

Corporate Payment—any ACH transaction sent or received by you that was originated by a corporation for the account of a corporation.

I. ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SAT.—SUN.		WEEKLY TOTAL	
		Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
1./2. Debits	—													1.	2.
3./4. Credits	—													3.	4.
5./6. Total ACH transactions	1+3=5 2+4=6													5.	6.

II. RETURNED ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SAT.—SUN.		WEEKLY TOTAL	
		Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
7./8. Debits returned	—													7.	8.
9./10. Credits returned	—													9.	10.
11./12. Total returned transactions	7+9=11 8+10=12													11.	12.

III. ACH DEBIT TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SAT.—SUN.		WEEKLY TOTAL	
		Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
13./14. Insurance premium	—													13.	14.
15./16 Home mortgage	—													15.	16.
17./18. Telephone bill payment	—													17.	18.
19./20. Corporate payment—replacement for depository transfer	—													19.	20.
21.22. Other payments	—													21.	22.
23./24. Total ACH debit transactions	13+15+17+19+21=23 14+16+18+20+22=24													23.	24.

Please report all actual counts. Do *not* round off.

ATM TRANSACTIONS—any transactions initiated at an automated letter machine by the customer.

IV. ATM TRANSACTIONS

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Sat./Sun.	WEEKLY TOTAL
25. Total number of cash withdrawals from checking.								25.
26. Total number of cash withdrawals from savings.								26.
27. Total number of cash withdrawals from credit card.								27.
28. Total number of balance inquiries.								28.
29. Total number of transfers between checking, savings, and credit card accounts.								29.
30. Total number of checking deposits received								30.
31. Total number of savings deposits received.								31.
32. Total number of bill payments.								32.
33. Total number of other ATM transactions.								33.
34. Total ATM transactions.	25+26+27+28+29+30+31+32+33=34							34.
35. Total dollar value of items in No. 25.		$	$	$	$	$	$	35. $
36. Total dollar value of items in No. 26.		$	$	$	$	$	$	36. $
37. Total dollar value of items in No. 27.		$	$	$	$	$	$	37. $
38. Total dollar value of items in No. 30.		$	$	$	$	$	$	38. $
39. Total dollar value of items in No. 31.		$	$	$	$	$	$	39. $
40. Total dollar value of items in No. 32.		$	$	$	$	$	$	40. $

Please complete the following question:

	MAIN OFFICE		BRANCH OFFICES		OFF-PREMISES UNITS		TOTAL ATM UNITS	
	automated teller machines	cash dispensers	automated teller machines	cash dispensers	automated teller machines	cash dispensers	automated teller machines	cash dispensers
How many automated teller machines/cash dispensers do you presently have in service? →	41.	42.	43.	44.	45.	46.	47.	48.
How many automated teller machines/cash dispensers do you plan to install in the next 12 months? →	49.	50.	51.	52.	53.	54.	55.	56.
What was the total volume of ATM transactions for all machines installed at each location during the survey excluding balance inquiries? →	57.	58.	59.	60.	61.	62.	63.	64

NOTE:

47=41+43+45

48=42+44+46

55=49+51+53

56=50+52+54

63=57+49+61=34-28

64=58+60+62=34-28

65. Are your automated teller machines/cash dispensers currently . . . 1. On-line? 2. Off-line? (circle one)

Please describe any significant EFT problems you are experiencing. Consider availability, equipment, personnel, settlement, exception or rejection items, card issuance, theft, fraud or security.

Additional Comments

Appendix B

EFT Geographic Areas

Figure B-1
EFT Geographic Areas

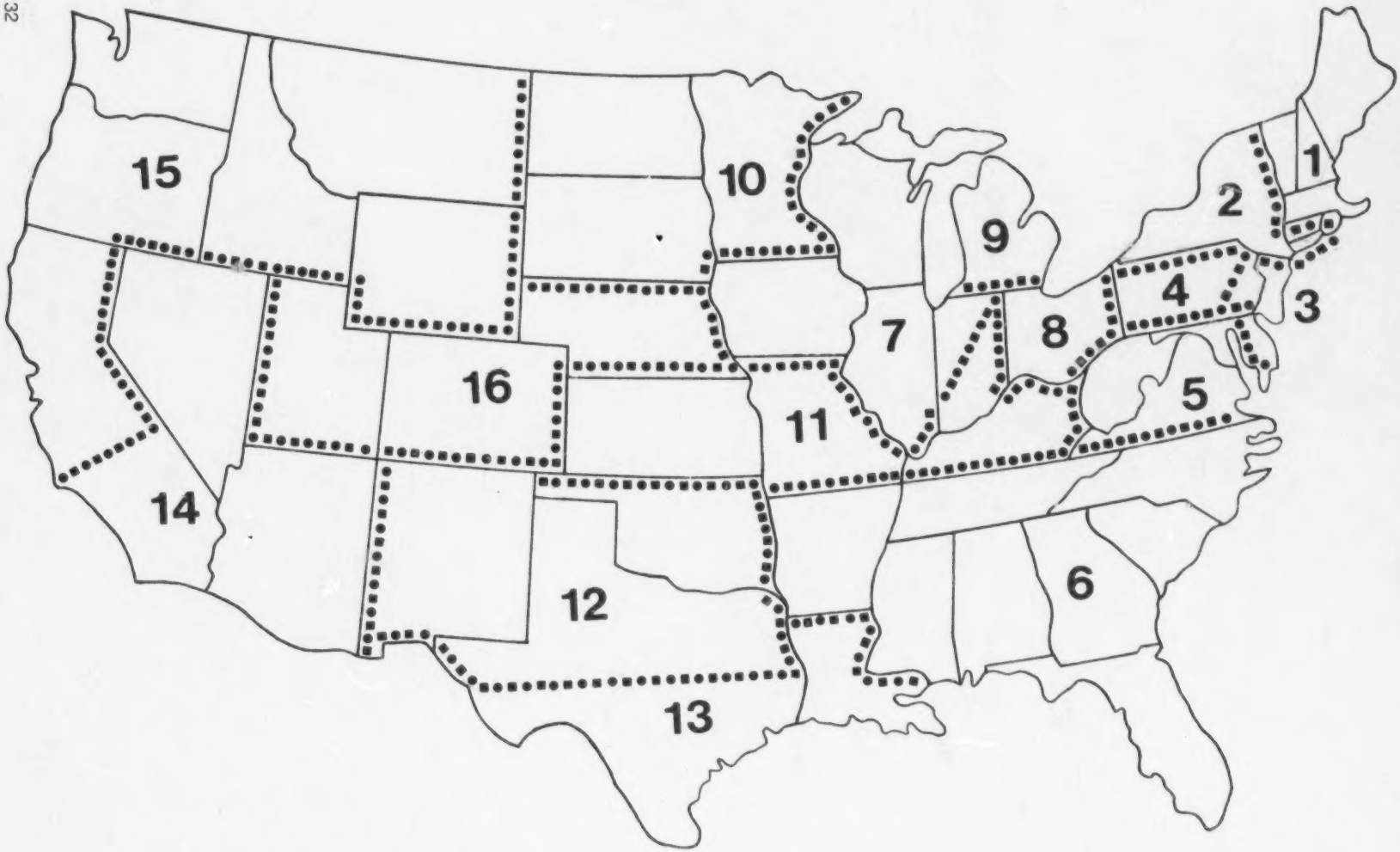

Table B-1

Survey Respondents by Geographic Area

Area*	ADL Survey Banks 1978	1979	1980	1981	All Reporting Banks† 1978	1979	1980	1981
Boston	3	1	3	2	10	9	12	10
New York	5	5	4	4	20	17	17	14
Philadelphia	3	1	2	3	18	22	24	18
Pittsburgh	3	2	3	3	6	5	5	5
Washington, D.C.	2	1	1	2	10	7	9	9
Atlanta	2	2	1	2	14	19	21	18
Chicago	6	3	5	3	12	8	11	12
Cleveland	3	3	3	3	12	11	11	13
Detroit	3	1	2	1	6	8	9	9
Minneapolis/St. Paul	0	0	0	1	0	0	0	5
St. Louis	1	2	3	1	9	9	11	10
Dallas	3	2	3	2	6	4	6	7
Houston	2	2	2	2	8	9	8	5
Los Angeles	2	1	1	0	9	9	10	7
San Francisco	2	2	1	2	8	11	11	9
Denver	3	2	2	2	6	5	5	6
Total banks	43	30	36	33	154	153	170	157

**The Outlook for the Nation's Check Payment System: 1970-1980,* Arthur D. Little, Inc., Cambridge, Massachusetts, December, 1970.

† The non-ADL banks are not necessarily located in the cities surveyed by ADL. For the sake of consistency, however, their data are included in a regional area that has as its center the city studied in this survey. All reporting banks include the data from the ADL banks.

Appendix C

Problems Reported by Bankers

The following comments were submitted by bankers who participated in the Institute's 1981 EFT survey. The purpose of this section is to inform bankers about overall problems in the ACH and the ATM payments systems. References to specific organizations, vendors, or pieces of equipment are omitted.

ACH: Settlement

"We have had an ongoing problem of not receiving our magnetic tapes on their settlement dates. We are particularly concerned with the timely receipt of our regular processing tape due to the credit transaction it contains. We also have problems receiving our Statement of Activity and Return Item Settlement sheets on those days that our previously missing tapes are forwarded or a remake is sent."

"Smaller financial institutions are not giving their customers credit on paydate even though the institution has received credit from the ACH on that paydate. We have discovered that these institutions either do not have the capability to post these transactions until a day later or that the transactions are being processed through a data processing company. This problem is inconvenient to both our bank and our EFT customers."

"Correspondence for adjustments as well as settlement sheets rarely return to us in time to notify our corporate customers of problems before it is too late. This results in daily customer complaints concerning the whereabouts of their 'missing' money. Settlement sheets are not always received daily. On the whole, communications throughout the ACH system is very poor."

"We are experiencing a one-day delay on items (debits and credits) on the ACH tape. This means that the day we receive the tape, the customer is debited or credited. This causes a proof difference due to the one-day delay in settlement with the Federal Reserve account. The normal rule is to receive the tape, memo post the accounts the following morning, and actually debit or credit the accounts the following night, which would be when we settle with the Fed. This is caused by various companies submitting their tapes to the Fed one day late. The ACH will accept this type of transaction. In addition to proof differences, this means the account is never memo posted and will cause customer dissatisfaction."

"The most significant problem we experience with ACH is settlement. It seems most of the originating banks are not complying with the two-day prior-to-posting rule, therefore making it difficult to give our customers funds on the prearranged posting date. This procedure has also caused balancing difficulties."

"There should be a greater effort by all financial institutions for fast settlement and transfer of funds through the ACH network."

ACH: Prenotification

"Prenotes with incorrect information are not being returned to us."

"Some companies change the individual I.D. field without notifying us first with a prenotification."

"Insurance companies increasing the amount of debits without a 10-day prior notice causes a problem when a customer stops payment on that debit. For example, a stop payment is placed for an insurance debit for $20.10. The next month, the insurance company debits the account for $40.20. The $40.20 is not stopped."

"We have experienced problems with our Federal Reserve Bank not returning rejected prenotes on a timely basis. As a result, we have initiated live transactions at least 10 days later and then we have received the rejected prenotes from the Fed. Then, the live transactions are also returned at a later day."

ACH: Miscellaneous

"On the fifteenth and at the end of the month, we can expect our regional Federal Reserve Bank system to be down, therefore delaying our ACH tapes."

"Some banks are originating stale-dated items."

"When there is a major breakdown in the ACH network, the originating financial institution is the last to know."

"Frequently, availability problems are experienced with payroll deposits, which has created problems for the financial institutions involved as well as the final recipient of the funds. It has been our experience that the availability problem stems from two sources: (1) the Fed is not passing the data to the receiving financial institution on a timely basis; or (2) the receiving financial institution is not posting the deposits as required by regulation. This can lead to the originating financial institution losing credibility with the originating corporation and sometimes means the loss of a valuable account relationship."

"We are experiencing a great deal of trouble in clearing ACH return items. For instance, the ACH will make an entry to our account for an item returned by one of our correspondent banks. The correspondent bank copy of the advice is not sent to us, and we are unable to make the necessary entry to our correspondent bank. At other times, the ACH sends us a correspondent bank copy of an advice for a return item and does not make the necessary entry to our account. We then receive requests from our correspondent bank concerning these items and can only make an inquiry at the ACH about them."

ATM: Settlement

"Verification of paper items deposited is labor-intensive."

"Even though we authorize ATM transactions on-line, we post from MICR-encoded paper documents. Occasionally, we have a high reject rate due to ATM malfunctions, MICR ribbon, or sorter malfunction."

"As our deposit volume has increased, we have had some processing problems. Now the deposits are removed from the machine and processed manually. Customers who forget deposit tickets or list items incorrectly or use the wrong account number are common processing problems. We are attempting to educate our ATM customers as to the proper use of the deposit function."

"Our most significant problem to date has been with settlement, caused by staff misunderstandings and errors caused by a combination of data communication problems and software bugs. We feel the software/data communication problems have been resolved and we are in the process of retraining branch settlement personnel."

ATM: Regulation E

"We are still not offering access to savings from the ATM due to the Reg E requirement for a monthly statement."

"Reg E rules are causing losses and in a sense, making the bank liable for payment of almost every customer claim — even those involving customer negligence, such as writing the secret number on the card."

"Fraudulent claims under Reg E seem to be lagging slightly behind their 1980 levels."

ATM: Vandalism

"ATM vandalism has decreased during 1981."

"Security and vandalism, although not a problem with us, are key issues we expect to face with the increased number of installations in exterior free-standing off-premise locations."

ATM: Availability

"Availability hovers around 91%; of the 9% unavailable, 4% is scheduled downtime."

"Our number one problem is downtime caused by phone line trouble and computer room errors."

"Our ATM network consistently exceeds over 96% customer availability while averaging almost 15,000 transactions per machine per month."

ATM: Fraud/Losses

"Our service area does not contain a major metropolitan area. Therefore, our theft, fraud, and security problems have not been as frequent as experienced by other networks. All of our losses have been lost/stolen cards or fraudulent new accounts."

"Fraud is increasing mainly because customers carry cards and their personal code together."

"Overdrafts caused when the ATMs are off-line seem to be more difficult to recover than check overdrafts."

"We have experienced some difficulty with fake deposits. We allow $100 immediate availability on uncollected deposits made through an ATM."

"We have no significant problems in any area with the exception of lost/stolen cards from cardholders. Losses to date are slightly over anticipated planned dollars."

ATM: Miscellaneous

"We have problems getting customers to correct account numbers."

"Pricing and accurate costing are important issues for our network. We are convinced that EFT is cheaper, and the direction we want to take, but we must do a good job in evaluating our development costs, capital expenditures, and in turn, the method in which we recover these costs."

"The main problems we are having concern the growth of the program. There are three shifts working on EFT and keeping up with the training is quite a problem."

"Our biggest problem is 'not a problem.' Expansion at a very fast rate and on a very large scale has been causing large demands on personnel, funding, training, meeting deadlines, and maintaining a high quality service. We want to expand, but managing the change has been very challenging."